

Patient-perceived indicators as a basis for satisfaction assessment of healthcare

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Article Info

Article history:

Received Sep 28, 2021

Revised Dec 30, 2021

Accepted Feb 25, 2022

Keywords:

Assessment
Health care
Indicators
Patient
Satisfaction

ABSTRACT

Since satisfaction is a subjective matter, assessing satisfaction should begin from the individual perception of satisfaction. This study aimed to map the satisfaction indicators perceived by the patients as a foundation to develop instruments to assess health care satisfaction. The study adopted sequential exploratory design of mixed method approach. Thirty patients participated in the interviews and 300 patients for the survey. The thematic analysis identifies 159 items of satisfaction. The items were condensed into 34 indicators and distributed into the five components of the service quality (SERVQUAL) model. A survey containing the 34 indicators were developed to measure their validity and reliability. The Product moment test of validity shows the value of correlation table (r_{n-2} ; $\alpha=r298$; 0.05)=0.095. The values correlation tables are >0.095 , meaning the validity is achieved. The Cronbach alpha test shows that the values of all indicators are >0.6 , reflecting the reliability of the satisfaction indicators. The study concluded there is variation of satisfaction indicators of health care compared to the established instruments and the identified indicators are valid and reliable.

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1. INTRODUCTION

Measuring patient satisfaction needs a credible, valid and reliable instrument. Several approaches have been developed to assess the patients' satisfaction to the health care. The popular and widely adopted instrument is the three or five-points likert scale [1]–[4]. The context-based instruments are also developed to match the specialty of healthcare provided, such as satisfaction with nursing care scale (SNCS) [5], service quality measurement method for public health centers [6], public hospital service quality (PubHosQUal) [7], HospitalQual [8]. The American Nursing Association (ANA) assess patient satisfaction according to the patients value and their attitude to the nursing care they received during hospitalization [5]. The Patient-Satisfaction Survey is a patient satisfaction self-reported survey that aims to assess health care quality for improvement. The patient-satisfaction questionnaires (PSQ-18), The consumer assessment health plans (CAHP), The picker patients experience questionnaires (PPEQ-15) are widely adopted in America, England, Sweden, Switzerland, and Germany [9].

The SERVQUAL Model is widely used to assess service quality in different business, including health care [10]–[13]. Originally, Parasuraman developed the dimension of service quality in 10 categories and then simplified them into five dimensions, known as reliability, assurance, tangible, empathy, and responsiveness (RATER) [14]. Reliability refers to what extent the patient receives the health care expected from the provider. Assurance relates to the trust of the patient toward the services provided. Physical

resources are associated with the tangible dimension, while empathy reflects the behavior and attitude of the health staff. Finally, responsiveness conveys the idea how the alertness of the staff when responding to the patient needs.

Regardless of the significant development of instruments or models to assess patient satisfaction, our knowledge of how these methods are established is lacking. Researchers copy or adopt the established mechanism. Our concern is to what extent these procedures genuinely address the patient needs to assess their satisfaction. We are sometimes trapped in the concept of patients' perception index or established instruments to evaluate the patient satisfaction. Researchers rarely identify the perception or indicators of satisfaction that come from the patients themselves. This study assumes that knowing the indicators of satisfaction from the patient's point of view will be beneficial to create an accurate, credible, valid, and reliable model of assessment. This study aimed to map the satisfaction indicators perceived by the patients as a foundation to develop an instrument to assess health care satisfaction. It contributes to attaining a genuine and credible instrument to assess patient satisfaction.

2. RESEARCH METHOD

The study adopted both qualitative and quantitative procedures or mixed method. We employed sequential exploratory design begins with qualitative interview and follow up by quantitative surveys. The research was conducted in five community health centres (CHCs) of Sukodono, Ganting, Gedangan, Buduran, and Candi, in the District of Sidoarjo, East Java, Indonesia. Four CHCs provide outpatient service while CHC of Sukodono organizes the combination of both outpatient and inpatient services.

The respondents included 30 outpatients for interview and 300 outpatients for survey. The criteria of respondents are age 17 years old or above, members of the National Health Protection. The researchers personally approached the patients in waiting room, describing the objective of the interview or survey, and asking their time to participate in interview or to complete the surveys. The study targeted the outpatients to ensure the uniformity of the information as CHC mostly provides similar primary health care. The data were collected from May to June, 2021 before the government imposed the community activity restriction in July, 2021 due to COVID-19 pandemic.

Researchers interviewed the 30 outpatients in May, 2021 with health protocols. An interview guideline is provided for the interviewers to ensure homogeneity of the information. Upon the consent of the respondents, all interviews were audio-taped. The interviews were transcribed verbatim. The transcriptions were analyzed, coded, and defined the themes related to the indicators of satisfaction. The indicators were grouped according to the five dimensions of the SERVQUAL Model to establish a survey.

The survey was conducted in June, 2021 and there were 300 outpatients completed the survey. Four enumerators assisted the researchers to distribute the surveys. The survey aimed to test the validity and reliability of the satisfaction indicators. The survey data were statistically analyzed using SPSS to test validity (Product moment test) and reliability (Cronbach alpha test) of the indicator of satisfaction.

The Ethics Committee of Poltekkes Kemenkes Surabaya has granted ethical clearance No. EA/409/KEPK-Poltekkes_SBY/V/2021 on April 23, 2021. Informed Consent and Plain Language Statements of the research are available for all respondents. Respondents appeared in the publication by pseudonym to keep their privacy or confidentiality.

3. RESULTS AND DISCUSSION

3.1. Demographic information

The respondent of the study comprises to 30 outpatients patients for interviews and 300 outpatients for survey. Table 1 describes the demographic information of the respondent. The middle-aged adult group is the most patients visited the CHCs during the data collection. Female outnumbered the male patients. In term of education background, generally the patients finished senior high school while the percentage of tertiary education background is the smallest. The majority of the patients are employed in different sectors such as government staff, factory workers, and other self-employed workers such as farmers or small business (i.e. kiosk, small motorcycle mechanics). Unemployed patients are mostly staying home mothers or those who are looking for job.

Table 1. Demographic information of the respondents

		Demographic information (n=330 Outpatients)	
		n	%
1. Age group (years)	Young adults (17-30)	56	17.0
	Middle-aged adults (31-45)	149	45.2
	Old-aged adult (45 above)	125	37.8
2. Gender	Male	147	44.6
	Female	183	55.4
3. Education	Primary school or lower	62	18.8
	Junior high school	112	33.9
	Senior high school	136	41.2
	Tertiary education	20	6.1
4. Employment	Employed	247	74.8
	Unemployed	53	16.1
	Pensioners	30	9.1
5. Types health protection coverage	Recipient of premium assistance (RPA)	197	59.7
	Non-recipient of premium assistance (Non-RPA)	133	40.3

3.2. Mapping patient perceived indicators of satisfaction

The interviews reveal various indicators of satisfaction articulated by the patients. Regarding healthcare reliability, patients assume that effective and efficient physical examination, treatment, medicine, medical tools, and staff are important keys to fulfilling their satisfaction. They also believe that information they received, administration process, duration of consultation, referral service are essential. One of the patients said:

We hope that the efficacy of the medicine is good for us. The doctor could tell us what is happening to our illness and give us the best care and clear information about it. I am happy if the staff look all our body....those is vital for us (Rachmat, 37 years old)

Assurance to the quality of health care and the staff who provide the service are important to make the patient satisfied with the health care. Fatma, a 60 years old civil servant pensioner, said that:

I believe that the nurses and doctors are smart, diligent, and skillful. We need such people to help us get healthy. Sometimes, I am not satisfied with the medicines. But, that is okay, as we do not pay for the medicine.

The physical resources in terms of quality and quantity are important measures to assess satisfaction. For example, in one CHC, the patients are not happy with the parking area. Other patients expect that CHC is concerned about providing infrastructure for senior patients or people with disabilities. A young man who accompanied his grandmother argued that:

In recent years, the CHC building has been better and better. The waiting rooms are wide enough with enough seats. The rooms are also comfortable with Air Conditioning. The toilets look clean. We have no problem with those. I just concerned about the facilities for older adults or people with disabilities. For example, I do not see and ramp for wheelchair. I think all of these facilities are important to make us happy with the CHC.

The behavior and attitude of the staff are the most critical attributes of satisfaction mentioned by the patients. They expect that the staff serves them in friendly and polite manners. They are happy if the staff attentively listens to their complaints. A factory worker stated that:

What we need is a well-behaved staff. We expect the nurse and doctors to treat us well, be friendly with us, and importantly have time to listen to us...This is important as in many cases the staff are not nice, blaming us always. I think we will be happy if they treat us in good manners.

Providing service in a timely manner is also a crucial element of satisfaction. It is evident that the responsiveness level of staff is criticized. Queuing time in the registration process, waiting for the turn for medication, and pharmacy services rate the responsiveness level of health care. Diabetic patients said:

I found that the staff, medicines and other care are good. I am only not happy with the waiting time. Waiting time for pharmacy services, registration, and care is longer than the medical care itself. This makes me not happy. CHC needs to speed up the service on registration and pharmacy services.

The claims above are examples of how the patients indicate their satisfaction with health care. The analysis shows that there are 159 items of satisfaction resume from the interviews. The items were scrutinized and grouped the similar indicators to a single category of satisfaction. An item is chosen as the indicator if >50% the patients articulate it. The observed satisfaction indicators and their respective SERVQUAL dimensions can be seen in Table 2.

Table 2. The observed satisfaction indicators and their respective SERVQUAL dimensions

SERVQUAL dimensions	Satisfaction indicators	Frequency of indicator articulated (%)
Reliability (9 Indicators)	Physical examination	61
	Diagnosis	75
	Treatment	65
	Medicine	67
	Quantity of staff	62
	Information	65
	Medical documentation	68
	Consultation time	68
	Referral system	58
Assurance (6 Indicators)	Competent/Skilled staff	67
	Accurate diagnosis	55
	Effective treatment	68
	Effective medicines	69
	Knowledgeable staff	66
	Waiting room	68
Tangible (7 Indicators)	Seats	65
	Clean room	70
	Toilet	69
	Parking lot	61
	Facility for disabilities	54
	Medical equipment	64
	Friendliness	80
Empathy (7 Indicators)	Politeness	76
	Attentive listeners	70
	Motivating	63
	Supporting	64
	Patience	72
	Meticulous	69
	Registration process	73
Responsiveness (4 Indicators)	Queuing time	60
	Pharmaceutical service	68
	Prompt service/care	75

3.3. Validity and reliability of the indicators

Table 3 describes the results of validity and reliability test of observed indicators of satisfaction according to the the five dimensions of the SERVQUAL Model. The Product moment test calculates the validity of the indicators with the level of significance at 0.05. The questioner item is significant when the value of the corrected item-total correlation is bigger than the value of the correlation table. This study involves 300 respondents which the value of correlation table (r_{n-2} ; $\alpha=298$; 0.05)=0.095. It means that the indicator is valid when the value of the corrected item-total correlation is ≥ 0.095 . Furthermore, a reliability test measures the consistency of the test by time and place. The Cronbach alpha test is used to assess the reliability of the indicators of satisfaction. The indicators are reliable when the value of Cronbach alpha is ≥ 0.6 .

The Product moment test above reveals that the values of corrected item-total correlation of all indicators are >0.095 . It reflects that all indicators are valid and can be used to develop a questioner to assess the patient satisfaction. Similarly, the Cronbach alpha test values are all >0.6 , resume that all indicators are reliable and replicable in different respondents or contexts.

This study provides a clear boundary among dimensions of satisfaction in health care. Reliability dimension refers to the availability of service, including physical assessment, diagnosis, treatment, medicines, staff, information, medical documentation, consultation, and referral system. Variation of satisfaction indicators is visible in the provision of physical examination, sufficient length of consultation and referral system. A study in Al-Bashir Hospital, Jordan, reliability dimension overlaps with assurance dimension of satisfaction such as correct procedure and service, attention to the problem and queries of patient, trustfulness of the medication and treatment, accurate documentation, on time service [15]. For example, the availability of referral service. Some studies reveal that referral system is important indicator to fulfill their satisfaction. Dissatisfaction to the referral system is major issue of the implementation of the National Health Protection in Indonesia [16]–[18].

Table 3. Validity and reliability test of observed indicators of satisfaction

SERVQUAL dimensions	Corrected item-total correlation	Cronbach's alpha if item deleted	Validity test conclusion	Reliability test conclusion
1. Reliability				
R01. Physical examination	.537	.844	Valid	Reliable
R02. Diagnosis	.464	.849	Valid	Reliable
R03. Treatment	.533	.844	Valid	Reliable
R04. Medicine	.470	.849	Valid	Reliable
R05. Number of staff	.582	.840	Valid	Reliable
R06. Information	.595	.839	Valid	Reliable
R07. Medical documentation	.597	.839	Valid	Reliable
R08. Consultation time (duration)	.583	.840	Valid	Reliable
R09. Referral system	.569	.841	Valid	Reliable
2. Assurance				
A1. Competent/skilled staff	.524	.677	Valid	Reliable
A2. Effective medicine	.345	.730	Valid	Reliable
A3. Effective treatment	.450	.698	Valid	Reliable
A4. Knowledgeable staff	.511	.681	Valid	Reliable
A5. Accurate diagnosis	.491	.686	Valid	Reliable
3. Tangible				
T1. Waiting room	.569	.707	Valid	Reliable
T2. Parking lot	.550	.712	Valid	Reliable
T3. Toilet	.550	.712	Valid	Reliable
T4. Seats	.491	.728	Valid	Reliable
T5. Clean room	.438	.741	Valid	Reliable
T6. Facility for disabilities	.416	.749	Valid	Reliable
T7. Medical equipment	.484	.848	Valid	Reliable
4. Empathy				
E1. Friendliness	.514	.826	Valid	Reliable
E2. Politeness	.600	.814	Valid	Reliable
E3. Attentive listeners	.637	.807	Valid	Reliable
E4. Motivating	.603	.813	Valid	Reliable
E5. Supporting	.584	.816	Valid	Reliable
E6. Patience	.595	.814	Valid	Reliable
E7. Meticulous	.587	.816	Valid	Reliable
5. Responsiveness				
Rs1. Registration process	.493	.722	Valid	Reliable
Rs2. Queuing time	.492	.722	Valid	Reliable
Rs3. Pharmaceutical service	.554	.699	Valid	Reliable
Rs4. Prompt service	.527	.710	Valid	Reliable
Rs5. Prompt care by staff	.541	.704	Valid	Reliable

The assurance parameter refers to the trustfulness of the quality, effectiveness, and efficacy of the services provided, including the health staff competencies, diagnosis, treatment, and the efficacy of the medicine. Some indicators are slightly different from the study of Pramono, that the distribution of medicine, administrative skills of staff, and complaints management are the indicators of satisfaction [19]. In addition, doctor's ability and efficiency, regular examination of the patients, the accuracy of the report, and special caring for emergency patients are the determinants of assurance of health care delivered [20].

The tangible dimension simply relates to the physical appearance and amenities of the facility available in the health center. According to the patients interviewed, the condition of the waiting room (size and comfort), number of seats available for patients, cleanliness of the room, toilets, parking lot, and the availability of facilities for people with disabilities are the predictors of their satisfaction. These attributes will overall construct the image of the health provider. Architecture and all facilities in a business company shape the corporate image of the business [21]. According to Asnawi. [22], the hospital images significantly influence patient satisfaction. Therefore, the physical appearance of the health center building and the quality of all facilities (i.e., rooms, parking lot, and toilets) are important predictors of patient satisfaction [2]. A study by Alkazemi and colleagues found that location, parking, cleanliness, privacy, waiting rooms, music, and temperature are significantly associated with patient satisfaction [23].

Empathy is an essential indicator of patient satisfaction [15]. This study highlights some indicators of satisfaction viewed from the empathy dimension. The patients emphasized that friendliness, politeness, attentive listeners to the patient problems, patience, detail, and motivation and support are the parameters of satisfaction. The ways health staff build up their social interaction with patients. Positive behavior and attitudes of the staff psychologically impact the patients, which may accelerate the recovery process. Patients are not expecting quality health care but also the ways health staff communicate or interact with patients. health staff behaviors and attitudes, emotional supports, and respect for the patient preferences influence patient perception of satisfaction [3]. Some studies found that politeness, respect, and careful listening of the nurses are the most powerful trigger of patient satisfaction [9], [24], [25].

Satisfaction needs a responsive or a speedy service from the provider. The study identifies several parameters of satisfaction from the responsiveness domain. The patients argued that a speedy service on registration, pharmaceutical service, medication, queuing time, and any other services are essential to improve their satisfaction. Some studies report that speedy services, including long queuing in registration, medication, pharmaceutical services, is a serious problem in the health center in Indonesia. Patients are unsatisfied with the health services as it takes hours to get the medical services [26]–[29]. In both developing and developed countries, waiting in medical service could hinder the patients from getting the care needed on time, making them dissatisfied with the service [30].

Upon identifying satisfaction factors of patients, the next steps are to test how valid and reliable the indicators are. The test aims to verify that the indicators can measure what they are supposed to be and ensure applicable in a different setting. The study reveals that all indicators in the five dimensions of quality health care of the SERVQUAL model are valid and reliable, reflecting their credibility as questionnaires posed in a survey to assess patient satisfaction. The validity and reliability test is widely used in health care to assess healthcare delivery issues in various settings [31]–[33]. Since all indicators are valid and reliable, they are all applicable to develop genuine and credible instrument to assess satisfaction. In other words, the patients-perceived satisfaction indicators can be a basis to establish instruments to evaluate patients' satisfaction. The criteria of indicators are genuine as they come directly from the patients, not from researchers' interpretation. This approach is beneficial for both patients and health providers. First, the patients will obtain the care they expected. Second, by knowing the indicators of patient satisfaction, health providers will focus on improving such dimensions to maintain the loyalty of their customers.

4. CONCLUSION

Satisfaction is a subjective matter. Individual are differ in exercising satisfaction. Moreover, the instrument to assess satisfaction is varied and sometimes conflicting one to another. But, there is an uniformity that reseachers tend to adopt or use established instrument. Concerns to the patient perception of satisfaction indicators to build assessment instrument is lacking. This study proposes the idea that assessing satisfaction should begin with identifying the perceived indicators of satisfaction of the population assessed. It highlights the variation of indicators of satisfaction compared to the established instrument. It reveals the practicality and genuinity of satisfaction as it is developed from the patient's perspective. It is a different perspective how we assess patients satisfaction. The approach is beneficial as it consistent with genuine expectation of patients to the healthcare. Health provider obtains important information as the basis to maintain and improve the quality of health care.

The study bears limitations. The approach is a little bit time consuming as it follows some steps such as mapping the satisfaction indicators, testing the validity and reliability of the indicators, develop the instrument, and re-test the validity and reliability of the instrument. A significant research resources is required when the population is big and cover large area of research.





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